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THE NATIONAL AGRICULTURAL LIBRARY
AND ITS ACTIVITIES

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I. INTRODUCTION

- A. Authority: The Organic Act of 1862, establishing the Department of Agriculture, set forth a basic mission "to acquire and to diffuse among the people of the United States useful information on subjects connected with agriculture in the most general and comprehensive sense of that word," and placed upon the Secretary the responsibility to "procure and preserve all information concerning agriculture which he can obtain by means of books. ..." The Library was established the same year by the first Commissioner of Agriculture, and with the Library of Congress and the National Library of Medicine fulfills the traditional functions of a national library.

It makes available to the research workers of the Department, agricultural colleges and universities, research installations, other government agencies, agricultural associations, industry, individual scientists, farmers, and the general public, the agricultural knowledge of the world contained in literature. It collects current and historical published material and organizes it for maximum use through reference services, loans of publications or photoreproduction, and bibliographical services. It issues a monthly Bibliography of Agriculture in which is listed the agricultural literature of the world, and a biweekly Pesticides Documentation Bulletin, a computer-produced index to the world's pesticides-related literature. The Library also provides cataloging information to a commercial publisher for inclusion in the monthly National Agricultural Library Catalog, a listing of currently acquired titles. The National Agricultural Library collection contains approximately 1,248,000 volumes including publications in 50 languages currently acquired from over 155 governments and jurisdictional entities.

- B. National Agricultural Library's Mission: A detailed description of the National Agricultural Library's organization, mission, services, and publications is provided in the Scientific Information Activities of Federal Agencies, Number 30, March 1965, NSF-65-5 (National Science Foundation). A copy is attached.

II. COORDINATION OF SCIENTIFIC AND TECHNICAL INFORMATION ACTIVITIES

- A. Interagency Coordination: The Federal Council for Science and Technology, established a Committee on Scientific and Technical Information as one of its ten interagency committees, on May 22, 1962. Its continuing functions concerning scientific and technical information are:
1. Identify the problems and requirements;
 2. Review the adequacy and scope of present programs;
 3. Devise or review new programs and other measures to meet the requirements and solve the problems;
 4. Recommend standards, methodology, and systems for uniform adoption by the executive agencies;
 5. Identify and recommend assignments of responsibility among the executive agencies;
 6. Review and make recommendations concerning the resources assigned to the programs of the executive agencies;
 7. Recommend management policies to improve the quality and vigor of the information activities;
 8. Generally facilitate interagency coordination at management levels.

The Department's representative, by designation of the Secretary, is the Director of the National Agricultural Library.

B. Intraagency Coordination:

1. Organization: The Director of the Library is responsible for coordinating all science information services within the Department of Agriculture. To assist him in carrying out this assignment each USDA agency head has appointed a science information coordinator for his agency. The Director is also provided with staff support by the Office of the Assistant Director, Program Coordination Services.
2. Policies and Regulations: To ensure the widest possible dissemination of the policies of the Federal Council for Science and Technology, and to provide guidance to administrators as well as technicians all adopted policies are published in the Department's Administrative Regulations.
3. Availability of Research Reports: To make the results of research available to scientists and technicians, it is necessary that the Library have access to all publications issued as final reports of

research conducted outside the Department which is supported by the Department. All Department agencies have been urged to include language in their contracts providing for the immediate release of one copy of the final reports to the Library.

4. Clearinghouse Operations: To avoid duplication of effort and provide increased availability of bibliographies, translations, and studies on mechanized information systems, a clearinghouse was established in the National Agricultural Library to serve USDA personnel, land-grant colleges, experiment stations, state institutions and any firm or individual working in the agricultural or biological sciences.

The Library maintains records of agricultural bibliographies or translations being compiled or prepared throughout the United States. Information is collected also on documentation studies or systems. Any requester has access to this information, in return for which the Library asks only that copies of completed bibliographies or translations and information concerning mechanized information activities be transmitted to it and made available through its program to scientists all over the world.

Since its inception, bibliographies and translations having an estimated value of \$390,000 per year have been acquired and added to the collection. In addition, costs have been avoided by those institutions participating in the program.

The clearinghouse for research and development in scientific communication and documentation covers the following areas:

- a. Development or testing of machines, devices, and techniques for the storage and retrieval of scientific and/or technical information or data;
- b. Linguistics research;
- c. Machine translation;
- d. Documentation;
- e. Communication and information theory;
- f. Operations research of scientific information systems and processes;
- g. Studies of subject classification and indexing schemes.

5. Unpublished Research Information: The Task Force appointed to study the current research projects system within the Department of Agriculture has recommended that a pilot project be implemented

leading toward complete mechanization of the system. Arrangements have been made for close coordination with the Library particularly on vocabulary and systems design.

C. National Coordination:

- 1. Change in Classification Scheme: Beginning January 1, 1966, the National Agricultural Library adopted the Library of Congress classification scheme. The decision was based on a survey of current practice and future plans of agricultural college and university libraries throughout the United States. Its adoption, along with publication of the National Agricultural Library Catalog (described in Section III) will provide cataloging information to assist other agricultural libraries in making their publications available for use more quickly.

III. CURRENT ACTIVITIES

- A. New Building: The National Agricultural Library, containing the world's most comprehensive collection of agricultural, biological, and general chemical publications, is housed in physical facilities that were outgrown twenty years ago, completely inadequate, and harmful to the book collection.

Fortunately, the first step to alleviate this major impediment to the Library's efficiency and development was taken in fiscal year 1964 when funds for preliminary studies and for planning of a new and adequate library building were made available by the Congress. The building plans have been completed by Warner Burns Toan Lunde, New York City, and submitted to the General Services Administration for final approval.

A site, already the property of the Federal Government, at the Agricultural Research Center, Beltsville, Maryland, has been selected. The Beltsville location will enable the Library to remain in the Washington metropolitan area, and maintain its essential liaison with the other two national libraries. The Library will also be able to serve better the Department's scientists working at the Plant Industry Station and the Research Center.

The Congress appropriated \$7,000,000 in fiscal year 1966 which will permit the Library to proceed with the construction of a building of approximately 265,000 gross square feet which will be adequate to house the 2,000,000 volumes expected to be in its collection by the early 1980's, and the personnel to prepare, maintain and service them. It is anticipated that construction will be completed in 1968.

B. Information Centers:

1. Pesticides Information Center: The Department's first scientific information center, designed to give scientists working on pesticides research detailed information on published materials related to their work, has been established in the National Agricultural Library.

The first biweekly issue of the Pesticides Documentation Bulletin, a computer-produced index to published literature in any language from any country throughout the world was released on March 29, 1965. Subjects covered include: chemical and biological pest control, plant and animal diseases, insects, weeds, spraying and dusting equipment, and the effects of pests and their control on plants, animals, man, natural resources, and other values of man's environment.

A contract has been awarded for the design of a complete computer-based information storage, retrieval, and publication system covering the broad pesticides field. A fully operational system

which will produce demand bibliographies as well as the Bulletin is expected to be in operation by June 1967. The machine system will serve as a prototype for additional information centers in other essential subject areas.

The Library is working closely with the Federal Committee on Pest Control and the Departments of Health, Education and Welfare; Interior; and Defense, to ensure that services provided will meet essential needs of the expanded Federal and state research programs on pesticides and pest control.

2. **Veterinary Medicine:** The National Agricultural Library is working with representatives of the U. S. Public Health Service and the Directors of Libraries of the University of Missouri, Texas A&M, and Michigan State, on the possibility of establishing a nationwide information center for veterinary medicine. The project is being coordinated with the American Veterinary Medical Association, and Universities with major veterinary medical installations are expected to be invited to participate in the planning and development. This subject was discussed at the 102nd meeting of the American Veterinary Medical Association, which was held in Portland, Oregon, during July 1965.

- C. Dictionary Catalog of the National Agricultural Library, 1862-1965: Publication of the entire card catalog of the National Agricultural Library in book form will make the Library's resources more readily available to libraries, the agricultural community, industrial concerns, and research and scientific personnel on a worldwide basis.

It is the most comprehensive agricultural catalog in existence, including about 1,500,000 author, title and subject cards interfiled in alphabetical arrangement. It covers publications in all fields of agricultural interest, including: agriculture in general; agricultural societies, organizations, cooperatives and other institutions, animal science; plant science; agricultural chemistry and engineering; soils, fertilizers, and soil conservation; forestry and forest products; agricultural products and their industrial uses; home economics, except cook books; rural sociology and rural life; agricultural economics; statistics of production, trade, consumption, etc.

Current target date for availability of the complete set will be late 1966 or early 1967. It will be issued (by Rowman & Littlefield, Inc., 84 Fifth Avenue, New York, N. Y. 10011) in about 68 volumes, with about 768 pages in each volume. Price for the complete set will be approximately \$952.



- D. National Agricultural Library Catalog: The current catalog of the Library is published on a monthly basis with the title: National Agricultural Library Catalog. This catalog supplements the Dictionary Catalog. Each month all books and serials added to the Library's collection during the previous month appear in the National Agricultural Library Catalog beginning with the titles cataloged during January 1966. It is published by Rowman and Littlefield, Inc. Annual subscription rate is \$72.00; single issue price is \$7.50.
- E. Agricultural Vocabulary Project: Many specialized vocabulary lists and classification systems exist in the field of agricultural scientific and technical information. This was very apparent when, in January 1965, the Library requested of Department agencies lists or schemes used by the agencies for controlling such information. In response, we received 22 different items, of which at least 6 dealt with Forestry alone.

Within the Library, two sets of terms have been used for analyzing the subject content of published literature. In the card catalog, we use the terms shown in the published Subject Heading List. In the Bibliography of Agriculture, the terms used are those found in the literature, verified in the previous year's index of the Bibliography and in numerous dictionaries, thesauri, and other reference sources.

It is obvious that all users of agricultural/biological information will benefit from a single standard vocabulary. Such a list is also a basic requirement for mechanization. To meet these needs, the Library established its Agricultural Vocabulary Project in November 1964. The job of this project is to merge the Library's subject heading and classification lists. With financial support of Department research agencies and with cooperation of certain land-grant colleges and universities, other pertinent lists are also being merged. The goal is to create a single vocabulary which will meet the requirements of all agencies, organizations, or institutions dealing with agriculture and related fields. The vocabulary is being designed to serve as a key to published literature and to research reports and other agricultural-related information which have not yet reached the formal literature. Steps have been taken within the Department to assure close coordination with related activities, and recognition of Library leadership in this project.

The work has been planned in three phases:

Phase I includes the creation of a list of general terms, excluding chemical and taxonomic terms, proper names, etc.

Phase II will standardize subheadings and references which can be used in conjunction with the general terms to show particular emphasis or relationship.

Phase III will develop directories of chemical substances, taxonomic names, proper names, etc.

Phase I is now in progress. An alphabetical list of general terms is being developed from those used in the Library card catalog and in the Bibliography of Agriculture.

At the same time, in order to meet the need for classifying information, we are developing a Category List which shows the broad subject groupings into which literature and research reports can be divided. The first published version of the Category List appeared in November 1965. Its structure and content have been strongly influenced by the Bibliography of Agriculture, the Research Projects Classification Index of the Cooperative State Research Service, the Subject-Matter Index to Projects in Central Project Office of the Office of Science and Education, and the COSATI Subject Category List.

The basic alphabetical list of terms will be arranged under the broad headings of the Category List. Lists of terms in specialized areas will be produced by computer and distributed to subject experts for evaluation.

The need for subject expertise will not end with the completion of Phase I. Still more assistance will be needed for the clear definition of relationships between subjects and the development of directories of scientific terms. Since we believe that a standard bio-agricultural vocabulary will be of extreme value to the entire agricultural community, needed assistance is being obtained from that community.

F. International Activities: For 100 years the National Agricultural Library has had continuing international activities and relationships including:

1. Exchange of Publications;
2. In-Service Training;
3. International Cooperation in Handling
Scientific Information (Congresses);
4. Abstracting and Indexing;
5. International Organizations.

1. Exchange of Publications: Department policy delegates to the National Agricultural Library responsibility for making publications exchange arrangements with foreign governments, organizations or individuals for USDA publications. This enables the Library to acquire material in agriculture, biology, and related sciences. About 200,000 pieces are sent annually to 9,835 organizations in 155 countries, exclusive of Canada. The return flow brings to the USDA about 208,800 pieces each year.

The National Agricultural Library cooperates with organizations in newly developing nations as well as with those in established countries in bringing within the reach of research, scientific and technical personnel, the published literature of agriculture and its supporting sciences.

Through a cooperative project between the United Nations Special Funds, Food and Agriculture Organization, and the Government of Liberia, a College of Agriculture was established at the University of Liberia in Monrovia. A special section in the new University Library was reserved for agricultural publications. The National Agricultural Library collected and forwarded to this newly established college over 300 previously published USDA publications, in addition to adding the college to various current mailing lists to receive USDA periodicals and series currently. Concurrently, a memorandum was sent to Directors of State Experiment Stations, State Extension Directors, and Librarians of Agricultural Colleges in the United States, inviting them to assist this newly established College of Agriculture by sending their publications regularly to the school. As this school begins to publish, they will send their publications to the National Agricultural Library and the state universities that need them.

Assistance is also provided in the revision of mailing lists for the exchange of publications with U. S. organizations. The National Agricultural Library aided the Department of Agricultural Technical Services, Pretoria, Republic of South Africa, through a memorandum distributed to Agricultural Experiment Station Directors and Librarians of Agricultural Colleges, advising them of South African publications offered in exchange for publications of similar value from their institutions. Steps were outlined for establishing the exchange.

A typical example of routine exchange activity is the National Agricultural Library's correspondence with the Minister of Agriculture for Saudi Arabia. Here efforts are directed toward building a basic collection of materials on agriculture.

Such activities in cooperation are advantageous to the people of the United States as well as to those abroad. Cooperation lays the groundwork for development of successful research programs by foreign institutions and produces a flow of foreign publications into the United States containing valuable and sometimes unique agricultural information.

2. In-Service Training: The newly established International Agricultural Development Service, the Agency for International Development, and our Library assist foreign nations by developing programs and arranging a year of study and training in library techniques in the United States.

For example, in the Dominican Republic a vocational training school is being established to train agriculturalists. To achieve a maximum development of the students it is essential that an adequate and effective library be an integral part of the school. As part of our program a candidate received training in this country, and has returned home to assist in the establishment of the library and direct its activities.

3. International Cooperation in Handling Scientific Information (Congresses): The "Conference on Asian-Pacific Science Information Centers," jointly sponsored by the East-West Center and by the National Academy of Sciences, was held in Hong Kong June 10-14, 1963. It was called to give guidance in the formation of centers where scientific information could be readily provided to research workers in the South Asia and Asian area. Emphasis was given at the sessions to agriculture and the biological sciences. The discussion included the organization of information centers and libraries, cooperative projects in exchanges, national catalogs, standardization and translations as well as specialized training for workers in information centers.

In 1963 the Library was represented on the U. S.-Japan Committee on Scientific Cooperation, Panel on Exchange of Scientific Information. Abstracting and indexing services were studied at the sessions in Tokyo June 5-7, 1963. Areas were cited where expansion of services could be provided through continuing cooperation between centers in the two countries.

Employees of the National Agricultural Library planned, organized and conducted the Third World Congress of Agricultural Librarians and Documentalists which met in Washington, D. C., during the week of October 3, 1965. 162 participants from 39 countries attended the Congress, the central theme of which was, "An International Network of Agricultural Libraries."

4. Abstracting and Indexing: The Library has been represented at: The International Council of Scientific Unions Abstracting Board; The National Federation of Science Abstracting and Indexing Services, and other special sessions on abstracting and indexing. It was active in founding the World Agricultural Economic and Rural Sociology Abstracts.
5. Membership - International Organizations: International Association of Agricultural Librarians and Documentalists; International Federation for Documentation; International Federation of Library Associations; Institute of Information Sciences.

- G. Bibliography of Agriculture Mechanization: The first stage in the Library's bibliographic automation was presented in the August 1964 issue of the Bibliography of Agriculture.

The Personal Index in that issue was prepared with the aid of an optical scanner--a character recognition device--in combination with computers. The optical scanner portion of the index production is a relatively novel approach to the preparation of an index. Unlike the machine that can recognize special numerals only, such as those printed on bank checks, the optical scanner used in this system "reads" both numeric and alphabetic characters.

The material to be read is typed, at random, in a specially designed type face on continuous perforated sheets which are advanced through the typewriter by a pinfeed mechanism. The sheets are separated and mounted on the scanner which "reads" the typed characters, one line at a time, transferring the images to a magnetic tape in the form of magnetized spots. Alphabetizing of the random listings is performed by a high capacity computer, and a new magnetic tape is produced on which the names are in correct alphabetic order.

The heart of the system is a special computer program which takes the sequenced tape and composes an entire page of five columns within the memory of the computer. This page is written on another magnetic tape, one line at a time, and the tape is printed out by another computer on master sheets, with all five columns for each page being printed simultaneously for the monthly issuance of the Index. Once a year the monthly tapes are merged by still another computer program into an annual cumulative index. New pages will be composed and printed.

The next phase of the Bibliography's mechanization calls for the application of the same optical scanner-computer combination for the production of a monthly subject index and an annual cumulative subject index. This index requires more complex systems designing and programming and a target date of December 1966 has been set.

All surveys, plans, systems design and programming have been handled by USDA staff, a unique approach in information storage and retrieval mechanization.

IV. DEVELOPMENT OF THE NATIONAL AGRICULTURAL LIBRARY

The following chart illustrates the continuity of the National Agricultural Library efforts toward national services and efficiency in operations:

1864 - 1899

International Exchanges of Publications. Started 1866.
Account for more than half of the entire Library

Special Subject Bibliographies. (1894)

PIONEER 1st Printing of Catalog Cards. (1899)

1900 - 1949

PIONEER 1st Use of Photographic Copies for Interlibrary Loan. (1911)

PIONEER 1st Major U. S. Documentation Center. "BIBLIOFILM"
established in cooperation with American Documentation
Institute and Science Service. (1934)

Centralization of all U. S. D. A. Libraries (1940-42)

PIONEER Rapid Selector Developed. (R. Shaw); First Library experimenta-
tion with automated storage and retrieval of information-microform.

PIONEER 1st National Specialized Information Center. Affiliation with
American Chemical Society for copies of all articles listed in
Chemical Abstracts.

PIONEER Photographic Devices for Library Service. (R. Shaw) Photoclerk.
Travelling camera for use in stacks.

Management Improvement. Work analysis and measurement. Cost
accounting. In-Service training. Simplified cataloging.
Multi-purpose forms and coordinated processing.

Electronic Data Processing Equipment used for index to
Bibliography of Agriculture.

1950 - 1959

Contractual Services with land-grant colleges and universities.

Publication Exchange Desk. Clearinghouse center to expedite
exchanges between land-grant institutions and foreign centers.

Affiliation with Inter-American Institute of Agricultural Science Turrialba, Costa Rica to furnish microfilm copies of articles. Presidency of International Association of Agricultural Librarians and Documentalists. World Agricultural Economics and Rural Sociology Abstracts. Cooperation with Rockefeller Foundation in establishing documentation center at International Rice Research Institute (Philippines).

Weeding and Inventory of the Collection.

Microfilming for Preservation Started.

1960 - 1966

Plans for new library facilities completed.

Task Force ABLE (Agricultural-Biological Literature Exploitation) feasibility study of NAL functions and services to determine which would lend themselves to automation.

Survey of USDA information resources identified 341 sources of scientific and technical information.

Subject Heading List (4 volumes) published with support from the Rockefeller Foundation and distributed throughout the world.

Pesticides Information Center established.

Contractual arrangements completed for publication of the Dictionary Catalog of the NAL, 1862-1965.

Publication of the monthly, National Agricultural Library Catalog.

Development of an Agricultural Vocabulary.

Establishment of a central clearinghouse for agricultural translations, bibliographies and research and development projects in scientific communication.

Preliminary planning for a national agricultural library network.

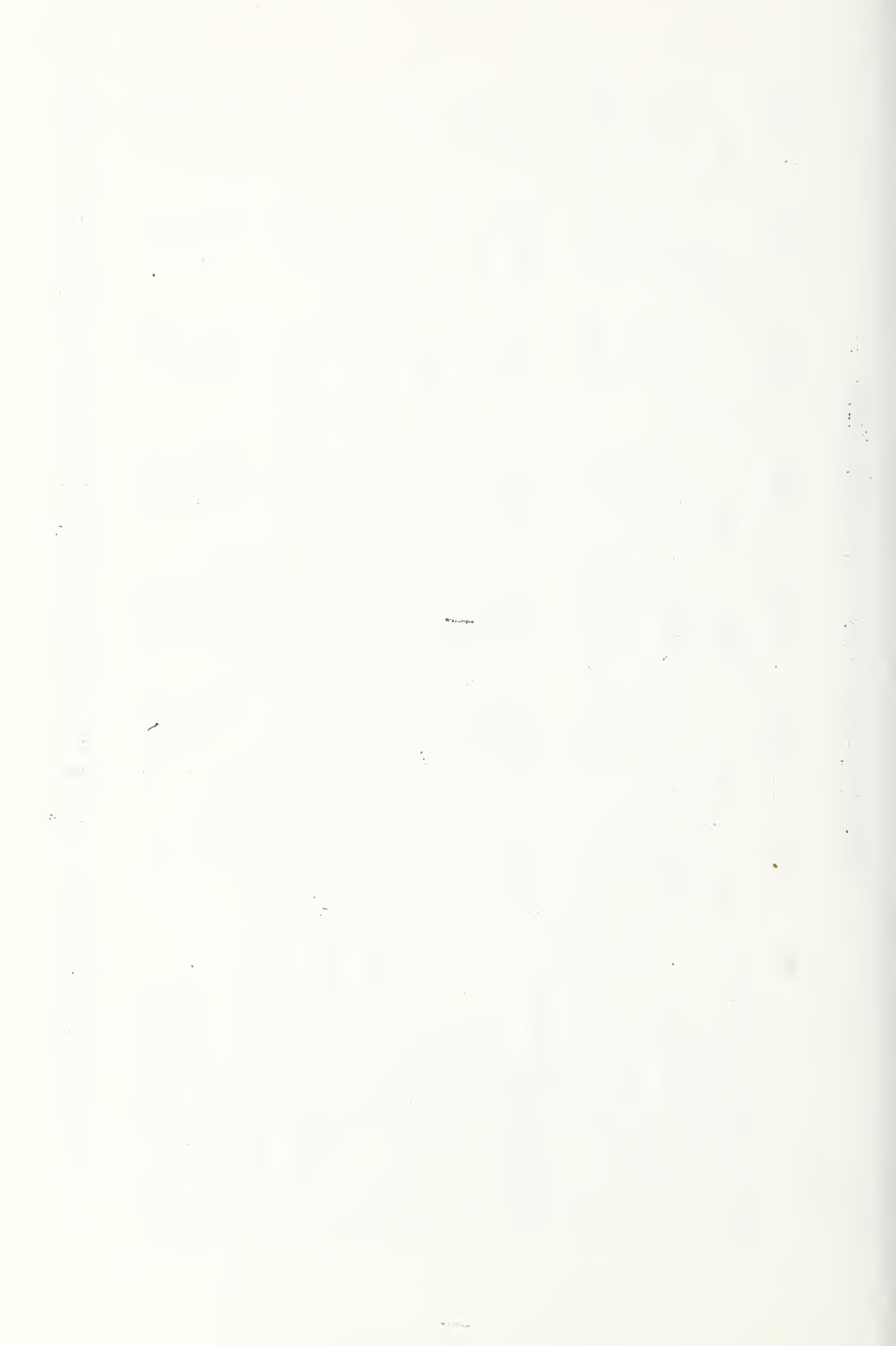
Steps taken to ensure effective coordination of scientific and technical information activities in the USDA and with other Federal agencies and Departments.

Adoption of the Library of Congress classification scheme and the Anglo-American Cataloging rules.

V. STATISTICAL SUMMARY 1959 - 1965 FISCAL YEARS

	<u>1959</u>	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>
Appropriations - adjusted (in thousands) ^{a/}	\$711	\$774	\$884	\$956	\$1,096	\$1,325	\$1,599
Funds for publications	\$38,940	\$43,615	\$44,518	\$55,389	\$63,929	\$85,223	\$77,987
Titles Cataloged	9,196	8,754	11,321	12,200	12,397	12,961	14,714
Catalog Cards Prepared	56,750	50,497	65,102	73,603	72,222	71,677	72,259
Periodical issues added to the collection	214,641	239,610	221,275	234,744	230,307	229,649	241,193
Periodicals received	506,868	520,049	520,539	492,964	590,913	596,085	508,905
Loan of publications	425,927	344,097	227,533	238,064	261,255	251,748	240,805
Reference questions answered	85,409	86,508	86,392	90,893	99,842	111,789	114,702
Items indexed in <u>Bibliography</u> of <u>Agriculture</u>	95,588	91,939	96,745	90,215	103,765	106,712	110,172
Items indexed in Pesticides Index	--	--	--	--	--	--	11,594
Volumes sent to bindery	4,450	7,034	7,345	8,161	8,459	9,113	7,850
Orders for publications	5,550	6,959	7,798	8,555	7,318	11,257	8,472

^{a/} Actual amounts appropriated to the National Agricultural Library have been adjusted in some years to reflect transfers to and from other United States Department of Agriculture agency appropriations. 12



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